



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,261	02/27/2004	Kenneth A. McQueeney	66396-125	1305
20277	7590	06/17/2005	EXAMINER	
MCDERMOTT WILL & EMERY LLP			DEB, ANJAN K	
600 13TH STREET, N.W.			ART UNIT	
WASHINGTON, DC 20005-3096			PAPER NUMBER	
			2858	
DATE MAILED: 06/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/787,261

Applicant(s)

MCQUEENEY ET AL.

Examiner

Anjan K. Deb

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 10, 11 and 20 is/are rejected.
- 7) ☒ Claim(s) 3-9, 12-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/29/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama (US 5,461,316) in view of Dittmann (US 5,444,376), and further in view of Boutigny (US 4,833,400).

Re claims 1,10,11 Maruyama discloses engine ignition detection system and method comprising input connector 7 for receiving a signal output from capacitive adaptor 29, and capacitive divider circuit (20,21,30) for measuring engine ignition signal.

Maruyama did not expressly disclose capacitive divider circuit comprising at least one of a variable capacitor and a plurality of fixed capacitors and switching element configured to enable at least one of adjustment of a variable capacitor and selection or de-selection of at least one of the plurality of fixed capacitors to provide one of a plurality of selected capacitance ratios.

Dittmann discloses engine ignition signal-acquisition system comprising at least one of a variable capacitor 45 and a plurality of fixed capacitors configured to enable at least one of

Art Unit: 2858

adjustment of a variable capacitor and selection or de-selection of at least one of the plurality of fixed capacitors to provide one of a plurality of selected capacitance ratios (column 4 lines 25-37). Even though Dittmann did not explicitly disclose a switching element it is inherently disclosed since Dittman disclosed that a variable capacitor is preferably simulated by parallel and/or series circuits consisting of several capacitors.

Boutigny discloses plurality of fixed capacitors and switching element configured to enable at least one of adjustment of a variable capacitor and selection or de-selection of at least one of the plurality of fixed capacitors to provide one of a plurality of selected capacitance ratios for obtaining high frequency multi-range attenuator for accurately measuring a signal 10 (Fig. 4).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Maruyama et al. by adding variable capacitance disclosed by Dittmann et al. and incorporating the switching element disclosed by Boutigny so that the capacitors may be switched in and out for obtaining a multi-range attenuator for accurately measuring a signal.

Re claim 2, Maruyama et al. did not explicitly disclose variable compensation circuit comprising a first shunt connected in parallel to an output of the capacitive divider circuit portion at one end and connected to ground at another end.

Dittmann et al. disclose a first shunt (45,44) connected in parallel to an output of capacitive divider circuit (Fig. 2)(column 3, lines 17-25).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Maruyama et al. and Boutigny by adding a first shunt connected in parallel to an output of capacitive divider circuit disclosed by Dittmann et al. for tuning and capacitive coupling of output signal for accurately measuring a signal.

3. Claims 1, 2, 10, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dittmann (US 5,444,376).

Re claim 1, Dittmann discloses variable compensation circuit 32 for capacitive adaptors comprising input connector 31 for receiving a signal output from capacitive adaptor (27, 25) positioned within an electric near field emitted from a component (11,12) of an engine ignition system (Fig. 1), an output connector 31 for outputting a signal output signal from variable compensation circuit 32, capacitive divider circuit (45,46,47)(Fig. 2) positioned between input and output connectors 31 comprising at least one of a variable capacitor 45 and a plurality of fixed capacitors 46,47.

Dittmann et al. did not expressly disclose switching element configured to enable at least one of adjustment of a variable capacitor and selection or de-selection of at least one of the plurality of fixed capacitors to provide one of a plurality of selected capacitance ratios but would have been obvious to do so since Dittmann et al. disclosed that a variable capacitor 45 is preferably simulated by parallel and/or series circuits consisting of several capacitors.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Dittmann et al. by adding switching element configured to enable at least one of a selection, de-selection, and adjustment of the plurality of capacitors since Dittmann et al.

Art Unit: 2858

disclosed that variable capacitance of capacitor 45 can be preferably simulated by parallel and/or series circuits consisting of several capacitors (column 4, lines 25-37) for achieving a desired capacitance level for capacitance tuning purpose.

Re claim 2, Dittmann et al. disclosed a first shunt (45,44) connected in parallel to an output of capacitive divider circuit (Fig. 2)(column 3, lines 17-25).

Re claim 10, Dittmann et al. disclose signal compensation method for engine ignition system diagnostics testing comprising the steps of establishing a circuit between a capacitive sensor 27 positioned within an electric near field emitted from a component of an engine ignition system, a variable compensation circuit 32, and a diagnostic testing device inputting a signal from the capacitive sensor to the variable compensation circuit 32, monitoring 48 the signal output from the variable compensation circuit 32 using the diagnostic testing device (Fig. 2,4) and adjusting a capacitance value of at least one capacitor 45 in the variable compensation circuit 32 to provide one of a plurality of selected capacitance reactance ratios, wherein the variable compensation circuit comprises a capacitive divider circuit portion including a plurality of capacitors (46,47,45).

Dittmann et al. did not expressly disclose switching element configured to enable at least one of a selection, de-selection, and adjustment of the plurality of capacitors but would have been obvious to do so since Dittmann et al. disclosed that variable capacitance of capacitor 45 can be preferably simulated by parallel and/or series circuits consisting of several capacitors (column 4, lines 25-37).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Dittmann et al. by adding switching element configured to enable at least one of a selection, de-selection, and adjustment of the plurality of capacitors since Dittmann et al. disclosed that variable capacitance of capacitor 45 can be preferably simulated by parallel and/or series circuits consisting of several capacitors (column 4, lines 25-37) for achieving a desired capacitance level.

Re claim 11, Dittmann et al. disclosed adjusting step further comprises adjusting a capacitance 45 value of a capacitive divider circuit (45,46,47) portion disposed in series between an input connector and an output connector 31 of the variable compensation circuit 32, the capacitive divider circuit portion comprising at least one of a variable capacitor 45 and a plurality of fixed capacitors (46,47).

4. Claim 20, is rejected under 35 U.S.C. 103(a) as being unpatentable over Dittmann (US 5,444,376) in view of Meeker (US 5,677,632).

Re claim 20, Dittmann et al. disclosed all of the claimed limitations as set forth above except switching element configured to enable at least one of adjustment of a variable capacitor and selection or de-selection of at least one of the plurality of fixed capacitors to provide one of a plurality of selected capacitance ratios but would have been obvious to do so since Dittmann et al. disclosed that a variable capacitor 45 is preferably simulated by parallel and/or series circuits consisting of several capacitors.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Dittmann et al. by adding switching element configured to enable at least one of a selection, de-selection, and adjustment of the plurality of capacitors since Dittmann et al. disclosed that variable capacitance of capacitor 45 can be preferably simulated by parallel and/or series circuits consisting of several capacitors (column 4, lines 25-37) for achieving a desired capacitance level for capacitance tuning purpose.

Re claim 20, Dittmann et al. disclosed all of the claimed limitations as set forth above except wherein the adjusting step further comprises adjusting a return to zero portion of a displayed waveform output from the variable compensation circuit.

Meeker (US 5,677,632) discloses adjusting a return to zero portion of a displayed waveform (Fig. 1-3) for performing calibration for a capacitive pickup circuit (column 3, lines 14-20).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Dittmann et al. by adding adjusting a return to zero portion of a displayed waveform disclosed by Meeker for sensor calibration.

Allowable Subject Matter

5. Claims 3-9, 12-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Boys (US 5,293,308) discloses signal distribution system comprising plurality of switched capacitors which are switched into or out of circuit instantaneously by control signals applied to the solid-state switches (Fig. 7).


Frus (US 5,155,437) discloses diagnostic device for engine (gas turbine) ignition system with capacitive voltage divider comprising capacitors C5, C1 (Fig. 3).

Bengtsson (US 20030098698 A1) capacitive voltage divider comprising shunt capacitor (guard structure) to shunt stray currents.

Art Unit: 2858

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



Anjan K. Deb

Patent Examiner

Art Unit: 2858

6/9/05

Tel: 571-272-2228

Fax: 571-273-2228

E-mail : anjan.deb@uspto.gov